

Greetings

Greetings and Salutations. We at *Avenger Technologies LLC*, wish to take this opportunity to thank you for purchasing the *Shadow* Paintball Marker. We have worked hard to provide you with a reliable marker. With proper care and maintenance, the *Shadow* will give you many years of enjoyment. It is important that you read and understand this manual before using this marker. It is our sincerest wish that you enjoy the sport of paintball, and continue a tradition of SAFETY FIRST.

⚠Warning - Not a Toy

This paintball marker is not a toy. It requires care when handling. It can result in serious injury and/or death if safety precautions are not followed. It is your responsibility to know and understand this manual, and what is required for the use of this marker, and the sport of paintball.

⚠Special Note to Parents

Use by persons under the age of 18 should be strictly supervised. Please read this manual and acquaint yourselves with all safety precautions.

⚠ Safety First

Always treat a marker as if it were loaded. Most accidents happen with a marker that a person believes not to be loaded.

Never point the marker at anything you do not wish to shoot.

Always keep the safety on, and your finger off the trigger, until you are ready to shoot.

Always use the barrel plug when not shooting.

Do not use any gas other than CO2, Air, or Nitrogen.

Use only tanks approved for Paintball. Do not use any other type of tank.

Always remove gas source before disassembly.

Store the marker unloaded and with the gas source removed.

Follow warnings on gas source for handling and storage.

Never leave gas source in direct sunlight.

If gas source is exposed to temperatures in excess of 130 degrees F, do not reuse.

Refillable gas sources should only be refilled by properly trained personnel.

Never pick up a tank with bare skin if the over pressure

Getting Started

release blows out. The quick escape of gas can cause the tank to become very cold and could result in injury.

Follow warnings and storage instructions listed on paintball packaging.

Never use anything other than .68 caliber paintballs.

Never freeze paintballs.

Paintballs may cause staining on some surfaces such as brick, concrete, cement, stucco, and wood.

Always wear eye, face, and ear protection designed specifically for paintball.

Never shoot at or near another person who is not wearing proper protection.

Always measure your markers velocity before playing paintball.

Never shoot at velocities in excess of 300 feet per second.

Have your markers FPS (feet per second) checked regularly. Many factors can affect the FPS, including brand of paintball, temperature, and type of gas you are using.

⚠ Only install gas source when you are ready to shoot!

1) Assemble Barrel.

Roll barrel o-ring into groove as shown in figure 1

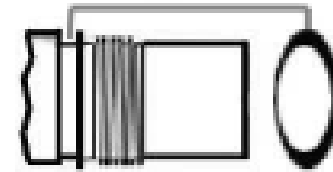


Figure 1. Barrel and O-Ring

Thread barrel into receiver housing. Give a good twist at the end to lock it into place.

Place Muzzle Breech on end of barrel. With breech on end of barrel, tighten set screw on bottom, back side of breech.. When the set screw contacts the barrel, give it another quarter turn to lock it in place. Do not over tighten, as you will strip out the thread.

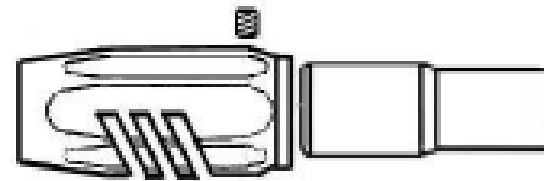


Figure 2 Muzzle Breech & Barrel

2. Press hopper (sold separately) into Vertical Feed Tube.

3. Add paintballs to hopper.

4. Set Safety to on. Press the button on the left side of handle, just above and forwards of the trigger. Push safety button so it is all the way in.

5. Cock marker by pulling back cocking knob till it catches.

6. Connect gas source to Bottom Line Air Source Adapter (BLASA).

You are now ready to play. Remember follow all safety guidelines, and play smart.

How to de-cock you marker

Put safety on. Put barrel plug in end of barrel. With barrel pointed towards the ground, turn marker upside down, so any balls in bolt chamber will roll back into hopper.

Return safety to live state. Hold cocking knob, and pull trigger. Slowly let cocking knob go forwards. When it has reached the end of it's forwards travel, marker is de-cocked. Put safety on.

How to remove gas source

Push safety on and place barrel plug in end of barrel. With marker pointed towards ground, unscrew gas source from Bottom Line Air Source Adapter (BLASA) by turning bottle counterclockwise. There is a small hole in the

bottom of the BLASA. Do not plug or cover it. It is to let gas escape and prolong the life of your tank o-ring. This hole should always be pointed down, and away from others when removing tank.

How to Adjust Velocity

Push safety on and place barrel plug in end of barrel. Loosen Velocity Adjust Lock Nut with a 1/2 wrench, approximately 1/8th of a turn.. Using a 1/8 Allen wrench, turn Velocity Adjusting Screw clockwise to increase velocity, counterclockwise to decrease velocity. We suggest making 1 turn, locking the nut and retesting. Repeat procedure till you reach the desired velocity. If you cannot get the desired speed, refer to next section, How to change Hammer Spring. Adjustment is at minimum when adjusting screw is flush, or even with back of Lock Nut.

If you can also use a tank O-ring on the hammer to reduce Feet per Second (fps).

How to change the Hammer Spring

 Gas source should be removed prior to performing this operation!

Your Marker uses Spider compatible springs. We only use the Light and Medium Hammer spring. We do not need a heavy spring to reach velocity. Many factors affect your markers velocity. Weather, temperature, type of paint, type of gas source and many other factors. The following procedure explains how to change the hammer spring.

Going from the medium hammer spring will decrease velocity, going from a light spring to a medium spring will increase velocity. For fine adjustment, refer to the section on Velocity Adjustment.

Remove Quick Disconnect Pin. Push from right side all the way out.

Remove Bolt and Hammer Block Assembly. Use caution. There are loose parts and the spring and other parts could fly out. Change the spring and reassemble. You must always chrony your marker after making any changes.

If you cannot get the Feet per Second on your Marker low enough, change the Hammer O-ring to a Urethane Tank O-Ring.

How to clean your marker

 Gas source should be removed prior to performing this operation!

Refer to Assembly Drawing on page 6 for all parts. Decock marker. Remove hopper and paint. Remove Barrel. Remove 10-32 screws number 48 A, B, & C using a 1/8 Allen wrench. Remove Fore Handle Adapter and Valve Seat assembly from marker.

Unscrew Cocking Knob (turn counterclockwise to remove. Use a quarter, or a straight blade screwdriver. Re-

move Quick Disconnect Pin. Push from right side all the way out.

Remove Bolt and Hammer Assembly. Use caution. There are loose parts and the spring could cause the parts to fly out.

Remove Valve Body Lock Screw in bottom of Housing with a straight blade screw driver. Turn counterclockwise to remove. Push Valve body out of the lower Housing chamber using a 1/2 wood dowel or other non metallic rod.

You can now run the Housing under warm water to clean it. Make sure it is dry before reassembling.

Use a quality, o-ring compatible oil. We use and recommend an industrial product called SuperLube. Oil all o-rings and hammer when reassembling.

Reassembly

Start oiling and reinstalling the Valve Body. Insert Valve Body, **small hole first**, in the lower Housing chamber from the left side. Use a 1/2 wood dowel or other non metallic rod to push the Valve Body into place. Make sure the cross hole is aligned with the hole in the bottom of the Housing. Insert Valve Body Lock Screw in bottom of Housing with a straight blade screw driver, turning it clockwise. When you feel the screw hit bottom, give it 1/8th to 1/4 turn more to tighten it. Do not over tighten.

Over tightening can cause gas to leak by valve body.

Oil and reinstall Fore handle adapter, with valve seat assembly. If you look down the lower housing chamber from the right side, you should see the Valve pin in the Valve body. If not, try reinserting, or turning left and right till the pin pops thru.

Line up hole in bottom of housing with threaded hole in fore handle adapter. Insert 10-32 x 1/2 Button head screw, and turn clockwise to tighten. Use caution. Improper alignment will ruin thread and render marker unusable. Tighten with 1/8 Allen Wrench. Do not over tighten.

Oil and insert Hammer and Bolt assembly. Reinstall Cocking knob. By grasping the Cocking knob, and moving the Hammer back, it is easier to line up the cocking knob indicator with the hole in the Bolt Block. Push Bolt and Hammer Block Assem. forwards. Reinstall Quick Disconnect pin. Push from the left side of Housing. Ball Should be pointed towards the rear of the Housing. Push all the way thru. Reconnect Handle Assembly with 2 - 10/32-1/2 button head cap screws.

TIP: When inserting Hammer & Bolt, puch on the Indicator Rod, and pull trigger to get assembly to slide into postion. Assemble cocking knob, and pull hammer back to cocked positon. Finish assembling Bolt and hammer block.

How to change the Ball Stop

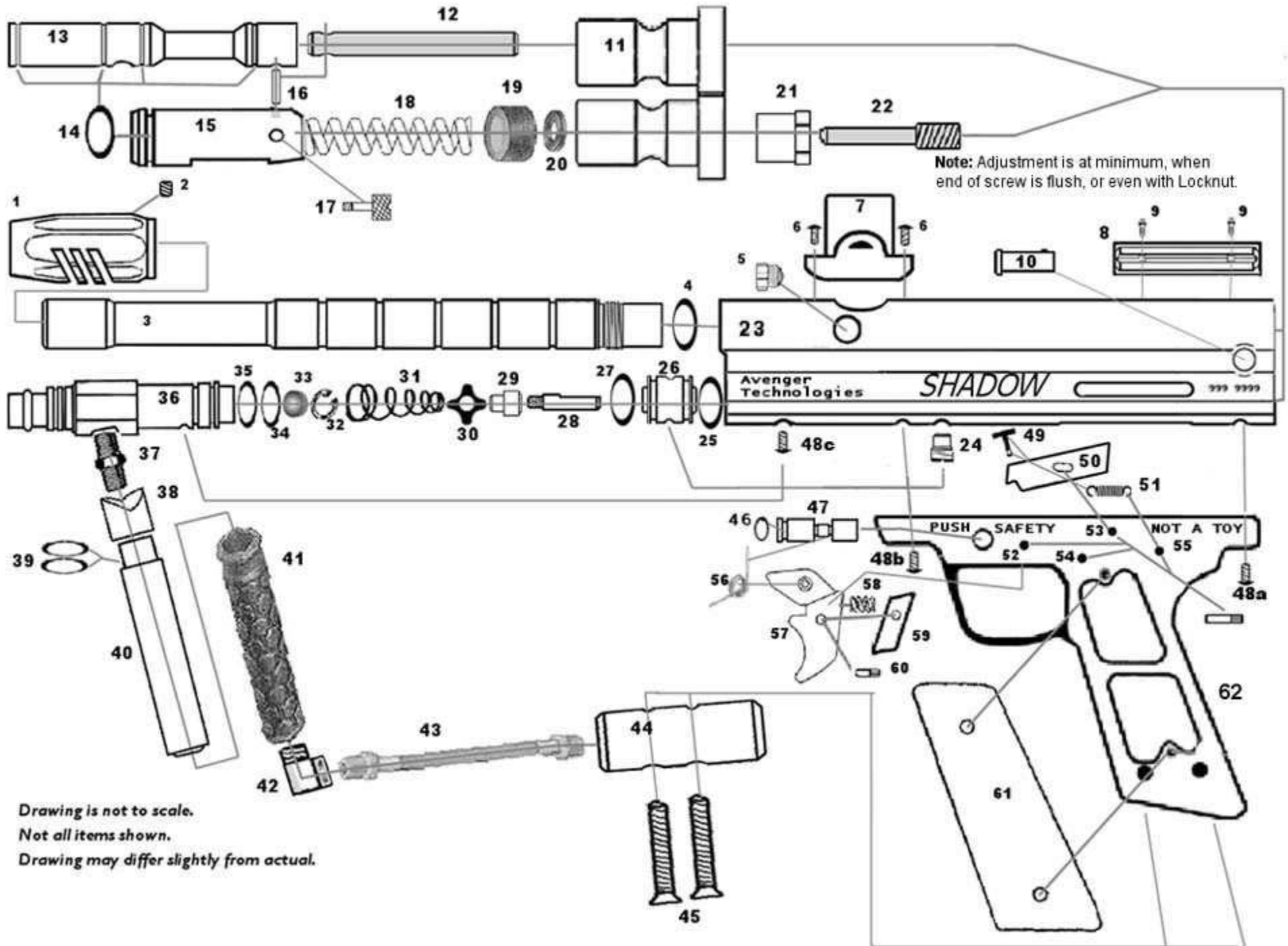
⚠ Gas source should be removed prior to performing this operation!

Push Safety to on, and place Barrel Plug in Muzzle Breech. Cock Marker, so bolt will not interfere with the installation of the new ball stop. Using a 1/2 inch wrench, unscrew Ball Detent, turning counterclockwise. Use care with the wrench or you can scratch the main housing. Install new Ball Detent. Caution: Make sure Ball Stop thread is correctly aligned with thread in housing. Failure to do so can result in stripped threads and make your marker unusable.

How to change the Filter

⚠ Gas source should be removed prior to performing this operation!

Push Safety to on, and place Barrel Plug in Muzzle Breech. Remove 48A, B, & C. Refer to page 6 Assembly Drawing. Remove Fore Handle Adapter with Valve Seat Assembly. Remove Valve Spring from Fore handle Adapter. With a small pair of internal retaining ring pliers, stick the tips into the 2 notches in the retaining ring. Squeeze and remove. The filter should now fall out. Install new filter, making sure is lays flat in the hole. Replace retaining ring and Valve Seat Spring. Replace Fore Handle Adapter and reattach Handle.



Drawing is not to scale.
Not all items shown.
Drawing may differ slightly from actual.

Assembly Drawing and Parts List

1	Muzzle Breech	35	Handle Adapter O-Ring (Tank O-Ring or 000-015 Viton)
2	4-40 x 1/8th Set Screw	36	Fore Handle Adapter
3	Barrel	37	1/8 NPT Nipple
4	Barrel O-Ring	38	Filler
5	Ball Stop	39	O-Rings used as spacers
6	8-32 x 1/4 Button Head (2 required)	40	Fore Handle Body
7	Vertical Feed Tube	41	Fore Handle Cover
8	Sight Rail	42	1/8 NPT Street Elbow
9	4-40 x 3/16ths Cap Screw (2 required)	43	6" Hose
10	Quick Disconnect Pin	44	Bottom Line Air Source Adapter (BLASA)
11	Bolt and Hammer Block Assembly	45	BLASA Retaining Screws
12	Cocking Indicator	46	Safety O-Ring (000-007 Red O-Ring)
13	Bolt	47	Safety Pin
14	Hammer O-Ring (000-015 Viton or Tank O-Ring)	48abc	10-32 x 1/2 Button Head (3 required)
15	Hammer	49	Sear Return Pin
16	Hammer & Bolt Pin	50	Sear
17	Cocking Knob	51	Sear Return Spring
18	Hammer Spring (Spider compatible Light & Medium supplied) Light Spring is Black, Medium Spring is Silver	52	Trigger Pin (52-55 are same pin used in 4 places)
19	Hammer Cushion (Damage may result to marker if not used)	53	Sear Pin
20	Velocity Adjusting Washer	54	Sear Stop Pin
21	Velocity Adjust Lock Nut	55	Return Spring Anchor Pin
22	Velocity Adjusting Screw	56	Torsion Spring
23	Main Body, Housing, Receiver	57	Trigger
24	Valve Body Lock Screw	58	Pawl Spring
25	Valve Body O-Ring (000-015 Viton or Tank O-Ring)	59	Pawl
26	Valve Body	60	Pawl Pin
27	Valve Body O-Ring (Urethane Tank O-Ring)	61	Grips (45 compatible)
28	Valve Seat Pin	62	Handle
29	Valve Seat (Spider Compatible)		Not Shown
30	Valve Seat Support	63	Barrel Plug
31	Medium Valve Spring (Spider Compatible)	64	6-32 x 3/8 Button Head (4 required)
32	Internal Retaining Ring for Filter(3/8 or 10mm)		Appendum: Part # 29, Valve Seat is now a 3 piece design.
33	40 micron Filter		#29A Valve Seat Body
34	Handle Adapter O-Ring (Urethane Tank O-Ring)		#29B Valve Seat Disc
			#29C Valve Seat Disc Washer

Warranty Information

Your Marker comes with a 1 year warranty against defects in material and craftsmanship, from the date the marker was purchased. This warranty is only for the original owner/purchaser. Avenger technologies LLC will repair or replace any marker that fails due to material or workmanship. This warranty does not extend to damage or normal wear items such as O-rings, springs, or Valve Seat. We reserve the right to require Proof of Purchase for this warranty to be in force.

If your marker needs repair and your reseller can not help you, call 1-860-283-0145 M-F 8am to 5pm or Email Sales@Avengertech.com.

Please have the following information ready. Date of purchase, where you bought your marker, Serial number, and the problem. If using email, make sure your provide a return address so we can contact you.

Registration

Please fill out and mail in your registration card.

Registration serves many purposes.

- 1) It guarantees your warranty. If you fail to register, and lose your sales receipt, you can lose your warranty.
- 2) In the event there is ever a recall, we will need to contact you. This is to protect the both of us.
- 3) We can keep you informed of updates and add-ons.

- 4) We like to hear from our customers.

So please, take the time to register by filling out and mailing the registration card today.

Miscellaneous

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